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November 13, 2001

By E-Mail

Gloria Blue, Executive Secretary  
Trade Policy Staff Committee  
Office of the U.S. Trade Representative  
600 17th Street, N.W.  
Washington, D.C. 20508

**PUBLIC DOCUMENT**

*Re: Steel, Investigation No. TA-201-73; Exclusion Request*

Dear Ms. Blue:

Pursuant to the notice of request for comments published at 66 Fed. Reg. 54321 (Oct. 26, 2001), we hereby submit the enclosed exclusion request for Abrasion Resistant Flat-Rolled Products on behalf of the parties listed in Appendix 4.

If you have any questions, please do not hesitate to contact us by telephone or by e-mail at [montalbine@dhlaw.de](mailto:montalbine@dhlaw.de).

Sincerely,



J. Kevin Horgan  
Donald E. deKieffer  
Marc E. Montalbine

Attachment

**Request To Exclude Products From Import Relief Under Section 203**

**Steel, Inv. No. TA-201-73**

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**Abrasion Resistant Flat-Rolled Products**

**(a) The designation of the product under a recognized standard or certification (e.g., ASTM, DIN), or the commercial name for the product and the HTS number under which the product enters the United States;**

Abrasion resistant flat-rolled products. This product is normally imported under HTS Nos. 7225.40.3050 and 7225.40.7000.

**(b) A description of the product based on physical characteristics (e.g., chemical composition, metallurgical properties, dimensions, surface quality) so as to distinguish the product from products for which exclusion is not sought;**

Abrasion resistant flat-rolled products of other alloy steel, not in coils, with a minimum Brinell Hardness of 400 to 600 HB. Sample data sheets for some typical abrasion resistant flat-rolled products are attached as **Appendix 1**.

**(c) The basis for requesting an exclusion;**

Abrasion resistant flat-rolled products are used for applications where stringent demands are imposed on abrasion resistance (e.g., crushers, sieves, feeders, measuring pockets, skips, journals, cutting edges, conveyors, buckets, knives, gears sprockets, etc.). These products are not produced in sufficient quantities in the United States, and the imposition of safeguard measures limiting the availability of these products would cause great harm to the U.S. purchasers who rely upon these products.

**(d) The names and locations of any producers, in the United States and foreign countries, of the product;**

*See attached Appendix 2.*

**(e) Total U.S. consumption of the product, if any, by quantity and value for each year from 1996 to 2000, and projected annual consumption for each year from 2001 to 2005, with an explanation of the basis for the projection;**

*See attached Appendix 3.*

**(f) Total U.S. production of the product for each year from 1996 to 2000, if any; and**

*See attached Appendix 3.*

**(g) The identity of any U.S.-produced substitute for the product, total U.S. production of the substitute for each year from 1996 to 2000, and the names of any U.S. producers of the substitute.**

There are no substitutes for abrasion resistant flat-rolled products.

**(h) Parties supporting request.**

A list of the parties supporting this request is attached as **Appendix 4**.

**(i) Contact person.**

For any questions regarding this request, please contact:

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# HARDOX® 400

## ABRASION RESISTANT PLATE

HARDOX 400 is an abrasion resistant plate with a hardness of about 400 HB, intended for applications where demands are imposed on abrasion resistance in combination with impact and/or good cold bending properties. HARDOX 400 possesses very good weldability.

### APPLICATIONS

Crushers, sieves, feeders, measuring pockets, skips, journals, cutting edges, conveyors, buckets, knives, gears, sprockets, dumptrucks, loaders, industrial trucks, lorries, bulldozers, excavators, slurry pipe systems, screw conveyors, presses etc.

### CHEMICAL COMPOSITION

(ladle analysis)

Plate thickness mm	C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	B %	CEV	CET
4 – 10	0,14	0,70	1,60	0,025	0,010	0,30	0,25	0,25	0,004	0,33	0,23
(10)– 20	0,14	0,70	1,60	0,025	0,010	0,50	0,25	0,25	0,004	0,37	0,26
(20)– 32	0,18	0,70	1,60	0,025	0,010	1,00	0,25	0,25	0,004	0,48	0,29
(32)– 51	0,22	0,70	1,60	0,025	0,010	1,40	0,50	0,60	0,004	0,58	0,35
(51)– 80	0,27	0,70	1,60	0,025	0,010	1,40	1,00	0,60	0,004	0,62	0,41
(80)– 130	0,32	0,70	1,60	0,025	0,010	1,40	1,50	0,60	0,004	0,70	0,48

$$CEV = C + \frac{Mn}{6} + \frac{Cr + Mo + V}{5} + \frac{Cu + Ni}{15}$$

$$CET = C + \frac{Mn + Mo}{10} + \frac{Cr + Cu}{20} + \frac{Ni}{40}$$

The steel is grain-refined.

### HARDNESS

HBW  
370–430

### MECHANICAL PROPERTIES

Typical values for  
20 mm plate thickness.

Yield strength $R_e$ N/mm <sup>2</sup>	Tensile strength $R_m$ N/mm <sup>2</sup>	Elongation $A_5$ %	Elongation $A_{50}$ %
1000	1250	10	16

### IMPACT PROPERTIES

Typical value for  
20 mm plate thickness.

Testing temperature °C	Impact energy Charpy-V, longitudinal J
-40 (-40°F)	45

### TESTING

Brinell hardness HBW according to EN ISO 6506-1, on a milled surface 0,5–2 mm below plate surface per heat and 40 t.

### FORM OF SUPPLY

Quenched. When necessary, hardness is adjusted by means of subsequent tempering.

### DIMENSIONS

HARDOX 400 is supplied in plate thicknesses of 4–130 mm. More detailed information on dimensions is provided in our brochure General Product Information E-40.

### TOLERANCES

- According to EN 10 029.
- Tolerances on thickness according to Class A.
- Tolerances on flatness according to Class N.  
(Normal tolerances)

### SURFACE FINISH

- According to EN 10 163-2.
- Requirements according to Class A.
- Repair conditions according to Subclass 1.  
(Repair by welding is allowed).

# DATA SHEET

2000.03.25

# HARDOX® 450

## ABRASION RESISTANT PLATE

HARDOX 450 is an abrasion resistant plate with a hardness of about 450 HB, intended for applications where demands are imposed on abrasion resistance in combination with good cold bending properties. HARDOX 450 possesses very good weldability

<b>Applications</b>	Crushers, sieves, feeders, measuring pockets, skips, journals, cutting edges, conveyors, buckets, knives, gears, sprockets, etc.										
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<b>Chemical composition</b> (ladle analysis)	Plate thickness mm	C max %	Si max %	Mn max %	P max %	S max %	Cr max %	Ni max %	Mo max %	B max %	CEV typv.	CET typv.
	3*)-10	0,18	0,70	1,60	0,025	0,010	0,25	0,25	0,25	0,004	0,41	0,30
	(10)- 20	0,21	0,70	1,60	0,025	0,010	0,50	0,25	0,25	0,004	0,47	0,34
	(20)- 32	0,23	0,70	1,60	0,025	0,010	1,00	0,25	0,25	0,004	0,57	0,37
	(32)- 50	0,23	0,70	1,60	0,025	0,010	1,40	0,25	0,60	0,004	0,57	0,35
	(50)- 80	0,26	0,70	1,60	0,025	0,010	1,40	1,00	0,60	0,004	0,62	0,41

\*) Plate thickness below 4 mm only after special agreement.

$$\begin{aligned} \text{CEV} &= C + \frac{\text{Mn}}{6} + \frac{\text{Cr} + \text{Mo} + \text{V}}{5} + \frac{\text{Cu} + \text{Ni}}{15} \\ \text{CET} &= C + \frac{\text{Mn} + \text{Mo}}{10} + \frac{\text{Cr} + \text{Cu}}{20} + \frac{\text{Ni}}{40} \end{aligned}$$

<b>Hardness</b>	HBW 425-475
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<b>Mechanical properties</b> Typical value 20 mm plate thickness	Yield strength $R_e$ N/mm <sup>2</sup>	Tensile strength $R_m$ N/mm <sup>2</sup>	Elongation $A_5$ %
	1200	1400	10

<b>Impact properties</b> Typical value for 20 mm plate thickness	Testing temperature °C -40 (40°F)	Impact energy Charpy-V, longitudinal J 35
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<b>Testing</b>	Brinell hardness, HBW according to EN 10 003-1, on a milled surface 0,5-2 mm below plate surface per heat and 40 t.
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<b>Form of supply</b>	Quenched. When necessary, hardness is adjusted by means of subsequent tempering.
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<b>Dimensions</b>	HARDOX 450 is supplied in plate thicknesses of 3*)-80 mm. More detailed information on dimensions is provided in our brochure General Product Information, E-5.
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\*) Plate thickness below 4 mm only after special agreement.

<b>Tolerances</b>	According to EN 10 029 – Tolerances on thickness according to Class A. – Tolerances on flatness according to Class N. (Normal tolerances)
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<b>Surface finish</b>	According to EN 10 163-2 – Requirements according to Class A. – Repair conditions according to Subclass 1. (Repair by welding is allowed)
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# DATA SHEET

1999.10.01

# HARDOX® 500

## ABRASION RESISTANT PLATE

HARDOX 500 is an abrasion resistant plate with a hardness of about 500 HB, intended for applications where demands are imposed on abrasion resistance.

### APPLICATIONS

Crushers, sieves, feeders, measuring pockets, skips, journals, cutting edges, conveyors, buckets, knives, gears, sprockets, etc.

### CHEMICAL COMPOSITION

(ladle analysis)

Plate thickness mm	C max %	Si max %	Mn max %	P max %	S max %	Cr max %	Ni max %	Mo max %	B max %	CEV typv.	CET typv.
4 – 13	0,27	0,70	1,60	0,025	0,010	1,00	0,25	0,25	0,004	0,58	0,40
(13)– 26	0,29	0,70	1,60	0,025	0,010	1,00	0,50	0,30	0,004	0,60	0,42
(26)– 40	0,29	0,70	1,60	0,025	0,010	1,00	1,00	0,60	0,004	0,65	0,43
(40)– 80	0,30	0,70	1,60	0,025	0,010	1,40	1,50	0,60	0,004	0,73	0,46

$$CEV = C + \frac{Mn}{6} + \frac{Cr + Mo + V}{5} + \frac{Cu + Ni}{15}$$

$$CET = C + \frac{Mn + Mo}{10} + \frac{Cr + Cu}{20} + \frac{Ni}{40}$$

The steel is grain-refined.

### HARDNESS

HBW 4 – 26 mm 470 – 530  
(26) – 80 mm 450 – 540

### IMPACT PROPERTIES

Typical value for 20 mm plate thickness.

Testing temperature °C  
Charpy-V, longitudinal  
–40 (–40°F) J 30

### TESTING

Brinell hardness HBW according to EN ISO 6506-1, on a milled surface 0,5-2 mm below plate surface per heat and 40 t.

### FORM OF SUPPLY

Quenched. When necessary, hardness is adjusted by means of subsequent tempering.

### DIMENSIONS

HARDOX 500 is supplied in plate thicknesses of 4–80 mm. More detailed information on dimensions is provided in our brochure General Product Information E-5.

### TOLERANCES

According to EN 10 029.  
– Tolerances on thickness according to Class A.  
– Tolerances on flatness according to Class N.  
(Normal tolerances)

### SURFACE FINISH

According to EN 10 163-2.  
– Requirements according to Class A.  
– Repair conditions according to Subclass 1.  
Repair by welding is allowed.

### GENERAL TECHNICAL DELIVERY REQUIREMENT

According to our brochure E-5, General Product Information.

### HEAT TREATMENT

HARDOX 500 is not intended for further heat treatment.

## SPECIAL DATA SHEET

1998-01-01

**HARDOX® 600**

## ABRASION RESISTANT PLATE

HARDOX 600 is an abrasion resistant plate with a hardness of about 600 HB, intended for applications where demands are imposed on abrasion resistance.

<b>APPLICATIONS</b>	Crushers, sieves, feeders, measuring pockets, skips, journals, cutting edges, conveyors, buckets, knives, gears, sprockets, etc.							
<b>CHEMICAL COMPOSITION</b> (charge analysis)	C max % 0,48	Si max % 0,7	Mn max % 1,0	P max % 0,015	S max % 0,010	Cr max % 1,2	Ni max % 2,5	Mo max % 0,8
	The steel is grain-refined.							
<b>HARDNESS</b>	HBW 560 – 640							
<b>TESTING</b>	Brinell hardness HBW according to EN 10003-1, on a milled surface 0,5-2 mm below plate surface per heat and 40 t.							
<b>FORM OF SUPPLY</b>	Quenched. When necessary, hardness is adjusted by means of subsequent tempering.							
<b>DIMENSIONS</b>	HARDOX 600 is supplied in plate thicknesses 10-30 mm. Plate thicknesses ≥ 25 mm are supplied with mill edge or by special agreement only. More detailed information on dimensions is provided in our General Product Information, E-5.							
<b>TOLERANCES</b>	According to EN ISO 6506-1. – Tolerances on thickness according to Class A. – Tolerances on flatness according to Class N. (Normal tolerances)							
<b>SURFACE FINISH</b>	According to EN 10 163-2. – Requirements according to Class A. – Repair conditions according to Subclass 1. (Repair by welding is allowed)							
<b>GENERAL TECHNICAL DELIVERY CONDITION</b>	According to our brochure General Product Information, E-5.							
<b>HEAT TREATMENT</b>	HARDOX 600 is not intendend for further heat treatment.							
<b>FABRICATION</b>	Our Technical Customer Service Department will provide further information on request.							

## U.S. & Foreign Producers

### U.S. Producers:

**Bethlehem Steel Corporation**  
1170 Eighth Avenue  
Bethlehem, PA 18016  
USA

**United States Steel LLC**  
600 Grant Street  
Pittsburgh, PA 15219-2749  
USA

**Oregon Steel Mills**  
14400 N Rivergate Blvd  
Portland, OR 97203  
USA

### Foreign Producers:

**AG der Dillinger Hüttenwerke**  
Werkstraße 6  
D-66748 Dillingen  
Germany

**SSAB Oxelösund AB**  
Birger Jarlsgatan 58  
SE-613 80 Oxelösund  
Sweden

**GTS Industries S.A.**  
rue du Comte Jean  
F-59760 Grande-Synthe  
France

**Thyssen Krupp Stahl AG**  
Kaiser Wilhelm-Str. 100  
D-47166 Duisburg  
Germany

**Salzgitter AG Stahl und Technologie**  
Eisenhüttenstraße 99  
D-38239 Salzgitter  
Germany

**voestalpine Grobblech GmbH**  
Voest-Alpine-Str. 3  
A-4031 Linz  
Austria

**U.S. Consumption & Production**  
**Abrasion Resistant Flat-Rolled Products**

Item	Quantity (in short tons)					
	1996	1997	1998	1999	2000	2001
U.S. Consumption	220,000	210,000	210,000	190,000	180,000	190,000
U.S. Production	150,000	130,000	120,000	100,000	100,000	

Item	Value (U.S. dollars)					
	1996	1997	1998	1999	2000	2001
U.S. Consumption	143,000,000	136,500,000	136,500,000	123,500,000	117,000,000	117,000,000
U.S. Production					123,500,000	143,000,000

U.S. consumption and production quantities are based upon market estimates. U.S. consumption values are based upon a price of \$650/short ton.

## **Parties Supporting Exclusion Request**

**SSAB Swedish Steel Inc.**  
4700 Grand Avenue  
Pittsburgh, PA 15225  
USA

**AG der Dillinger Hüttenwerke**  
Werkstraße 6  
D-66748 Dillingen  
Germany

**GTS Industries S.A.**  
rue du Comte Jean  
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**Salzgitter AG Stahl und Technologie**  
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